

UNDERGROUND STORAGE TANK CLOSURE REPORT

BOEING REALTY – MCDONNELL DOUGLAS 19503 SOUTH NORMANDIE AVENUE LOS ANGELES, CALIFORNIA

Prepared for

Boeing Realty – McDonnell Douglas 3760 Kilroy Airport Way, Suite 500 Long Beach, CA 90806

November 17, 2000

Prepared by

American Integrated Services, Inc. 2680 Seminole Avenue Lynwood, California 90262

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1.0 INTRODUCTION

This report summarizes Underground Storage Tank (UST) closure activities completed at 19503 South Normandie Avenue in Los Angeles, California (subject site) (see Figure 1 in Appendix 1). Boeing Realty (Boeing) engaged the services of American Integrated Services, Inc. (AIS) for permitting and closing of one UST, under the oversight of the City of Los Angeles Fire Department (LAFD). This report was prepared to document UST closure activities.

The work completed consisted of the removal of one 5,000-gallon split UST, and the removal of associated piping and dispenser. The two-compartment UST contained gasoline. AIS personnel collected soil samples below the UST and dispenser to determine whether the fuel had impacted the surrounding subsurface soils. Soil sampling was not performed under the pipeline due to the short distance (about 10 feet) between the UST and the dispenser. The sampling was performed under the oversight of the LAFD. This report summarizes tank closure work and discusses the soil analytical results.



2.0 FIELD ACTIVITIES

2.1 PERMITTING

Prior to commencement of the work, AIS obtained a UST closure permit on behalf of Boeing Realty – McDonnell Douglas from the City of Los Angeles Fire Department for the removal one 5,000-gallon split UST containing gasoline, and associated dispenser (permit dated August 21, 2000). A copy of the closure permit is provided in Appendix 2.

2.2 TANK PREPARATION AND REMOVAL

In August 28, 2000, AIS broke out the concrete pavement around the UST and the associated dispenser island. The UST was located to the east of Building 20. The dispenser island was located to the north of the UST (refer to Figure 2). AIS removed the piping and dispenser. AIS excavated around the UST to prepare for cleaning and removal. The UST was pressure rinsed until satisfactory lower explosive limits (LEL) and total oxygen concentrations were achieved. The tank was certified as safe for removal by Harbor Testing. A copy of this Certification, dated August 29, 2000, is provided in Appendix 3. Approximately 60 gallons of the tank rinseate was recovered with a vacuum truck and transported to the DeMenno Kerdoon facility in Compton, California, for treatment and disposal. Copy of the disposal manifest is provided in Appendix 3.

On August 29, 2000, under the direction of the LAFD, AIS removed the UST from the excavation. The removed 5,000-gallon tank was transported to the State Iron and Metals yard in Santa Fe Springs, California for tank destruction. The tank's destruction certificate is included in Appendix 3.

2.3 SOIL SAMPLING OPERATIONS

Upon completion of the tank removal, AIS personnel collected soil samples from the tank excavation, and under the removed dispenser. The locations of the samples are shown on Figure 2. Sampling was performed under the direction of the LAFD inspector. Two soil samples were collected under the removed tank from approximately two feet beneath tank's invert. One sample was collected towards the northern end of the removed UST and the other sample towards the southern end. Similarly, one soil sample was collected under the removed dispenser, from approximately 2 feet below bottom of the removed dispenser. The soil samples were collected using the bucket of a backhoe.

The samples were collected in laboratory grade glass jars with Teflon™ lined plastic lids. Each sample was immediately labeled and placed in a cooler. The soil samples were

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submitted to Del Mar Analytical, a California state certified laboratory, for testing. Laboratory results and chain-of-custody documents are included in Appendix 4.

2.4 SITE RESTORATION

Site restoration activities were performed in August 30 and September 1, 2000. The UST excavation was backfilled with pea gravel up to two feet below grade. Imported soil was then placed on the pea gravel and compacted to 95% compaction level. Backfill activities were performed under the oversight of Converse Consultants.

3.0 ANALYTICAL RESULTS

3.1 METHODOLOGY OF LABORATORY ANALYSIS

Soil samples were collected, maintained, prepared and analyzed according to Test Methods for Evaluating Solid Waste, (SW-846). The chemical analyses were performed by Del Mar Analytical, a laboratory certified by the State of California Department of Health Services.

All soil samples were analyzed for gasoline related compounds, as required by the LAFD tank removal permit. Analysis included Total Petroleum Hydrocarbons as gasoline (TPH-G) using EPA Method 8015M; benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) using EPA Method 8021B, and for Total Lead by EPA Method 7420. Refer to Appendix 4 for laboratory and quality assurance/quality control (QA/QC) reports and chain-of-custody records.

3.2 RESULTS AND INTERPRETATION OF LABORATORY ANALYSIS

All collected soil samples were analyzed for gasoline related compounds, in accordance with the LAFD requirements. The analytical results are summarized in Table 1.

Southern Tank Section: One soil sample, from a depth of about 11 feet below grade, was collected from the southern section of the split UST. No TPH-G, benzene, ethylbenzene or MTBE were measured in this sample. Xylenes at 0.015 mg/Kg and toluene at 0.0087 mg/Kg were detected.

Northern Tank Section: One soil sample, from a depth of about 11 feet below grade, was collected from the northern section of the split UST. No TPH-G, benzene, toluene, ethylbenzene or xylenes were measured in this sample. MTBE was measured in this sample at 0.390 mg/Kg (concentration of MTBE measured by EPA Method 8260B).

Dispenser Area: One soil sample, from a depth of about 3 feet below grade, was collected under the removed dispenser. No benzene, toluene, ethylbenzene, xylenes or MTBE were measured in this sample. Only gasoline (TPH-G) at 1.7 mg/Kg was detected.

Total lead was measured in the collected soil samples between <5 and 7.3 mg/Kg. These levels are typical of naturally occurring lead concentrations in soils.

The Regional Water Quality Control Board, Los Angeles Region (RWQCB) has set cleanup guidelines for gasoline, as provided in the RWQCB Interim Site Assessment & Cleanup Guidebook, May 1996 (referred to as 1996 RWQCB Guidelines). The groundwater in the vicinity of the subject site has been reported at approximately 100 feet below ground surface. For this case, the RWQCB clean-up guideline for gasoline is at 500 mg/Kg.

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Assuming on a conservative basis that the subsurface material is sand, the clean-up guideline for toluene is 2 mg/Kg and for xylenes is 20 mg/Kg. The detected levels of gasoline, toluene and xylenes were below these clean-up guidelines.

The primary Maximum Contaminant Level for MTBE in drinking water is 0.013 mg/L. There is no soil clean-up guideline for MTBE. Based on the fact that MTBE was measured in only one soil sample out of three collected samples, and the distance to groundwater (about 100 feet below grade, or about 90 feet below the collected soil sample with MTBE detection), it appears unlikely that the groundwater would be affected from former operation of this removed UST.

4.0 GEOLOGY AND HYDROGEOLOGY

4.1 GEOLOGY AND HYDROGEOLOGY

The subject property is located at an elevation of approximately 30 feet above mean sea level (msl). Surface topography in the area is almost flat and slopes gently to the east. The main physiographic feature associated with this area is the Torrance anticline. The Torrance anticline, located in the southerly part of the Hawthorne-Long Beach depression, is a gentle fold which trends southeast from Redondo Beach and contains the Torrance oil field.

The subject site overlies alluvial sediments consisting of brown to gray, fine to medium grained silty sand. According to Bulletin No. 104, <u>Planed Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County</u>, May 1990, soils beneath the site are made up of Recent alluvium which the Gaspur Aquifer is contained within. In addition, the Lakewood formation underlies the Recent alluvium. The Lakewood formation includes the Exposition aquifer and the Gage aquifer, which represent shallower groundwater beneath the subject site.

Hydrogeologically, the property is located in the West Coast Basin. The Los Angeles County, Department of Public Works, Hydrologic Records Division, was contacted regarding groundwater depth in the vicinity of the site. The closest well currently in the database (well No. 794B) is located approximately 2000 feet to the west-northwest of the site. It was last gauged on April 22, 1999, at which time groundwater was measured at a depth of 102.7 feet below ground surface. According to the LACDPW Coastal Plain Aquifer Groundwater Contour Map for Fall 1995, in this area, the groundwater flows to the west.

No groundwater was encountered during tank removal activities.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Boeing Realty engaged the services of American Integrated Services (AIS) for the closure of one Underground Storage Tank (UST) located at 19503 South Normandie Avenue in Los Angeles, California. Permit was obtained from the City of Los Angeles Fire Department (LAFD) for the removal of the UST. The UST consisted of one split, 5,000-gallon tank, containing gasoline. Associated piping and dispenser were also removed.

Soil samples were collected after removal of the USTs and dispenser. The purpose of the soil sampling was to determine whether contents previously stored in the UST had impacted the surrounding subsurface soil. The number of collected soil samples and the performed chemical analysis followed the guidelines set by the LAFD. A total of three soil samples were collected and analyzed, for Total Petroleum Hydrocarbons as gasoline (TPH-G) using EPA Method 8015M, benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8021B, and for Total Lead by EPA Method 7420.

Relatively low concentrations of toluene (0.087 mg/Kg) and xylenes (0.015 mg/Kg) were measured towards the southern section of the tank. Gasoline at 1.7 mg/Kg was measured under the dispenser. These levels are well below the clean-up guidelines provided by the RWOCB – Los Angeles Region.

MTBE was measured only in one soil sample (under the northern section of the tank) at 0.39 mg/Kg. There is no soil clean-up guideline for MTBE, however, the Maximum Contaminant Level for MTBE in drinking water has been set at 0.013 mg/L. Based on the fact that MTBE was measured in only one soil sample out of three collected samples, and the distance to groundwater (about 100 feet below grade, or about 90 feet below the collected soil sample with MTBE detection), it appears unlikely that the groundwater would be affected from former operation of this removed UST.

Based on the analytical results, no further action is needed. AIS requests that closure be granted for the removal of this 5,000-gallon UST.

6.0 LIMITATIONS

AIS has performed the activities cited herein in conformance with the scope-of-work prescribed by the client. AIS conducted the work in an objective and unbiased manner, and in accordance with generally accepted professional practice for this type of work. AIS believes the analysis to be accurate and relevant but cannot accept responsibility for the accuracy or completeness of available documentation or possible withholding of information by the interviewees, agencies, or other private parties. No other warranty, express or implied, is made. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

The findings from the soil investigation are based primarily upon analytical results provided by an independent laboratory. Interpretations of the subsurface conditions at the site, for the purpose of this investigation, are made from a limited number of available data points (example: soil samples) and subsurface conditions may be different in other locations.

AIS appreciates the opportunity to provide environmental management services for Boeing Realty – McDonnell Douglas. Should you have any questions or require additional information, please feel free to call us at (323) 249-8442.

Sincerely,

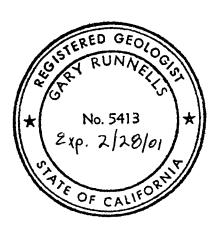
American Integrated Services

Gary Runnells, RG, REA

Vice President

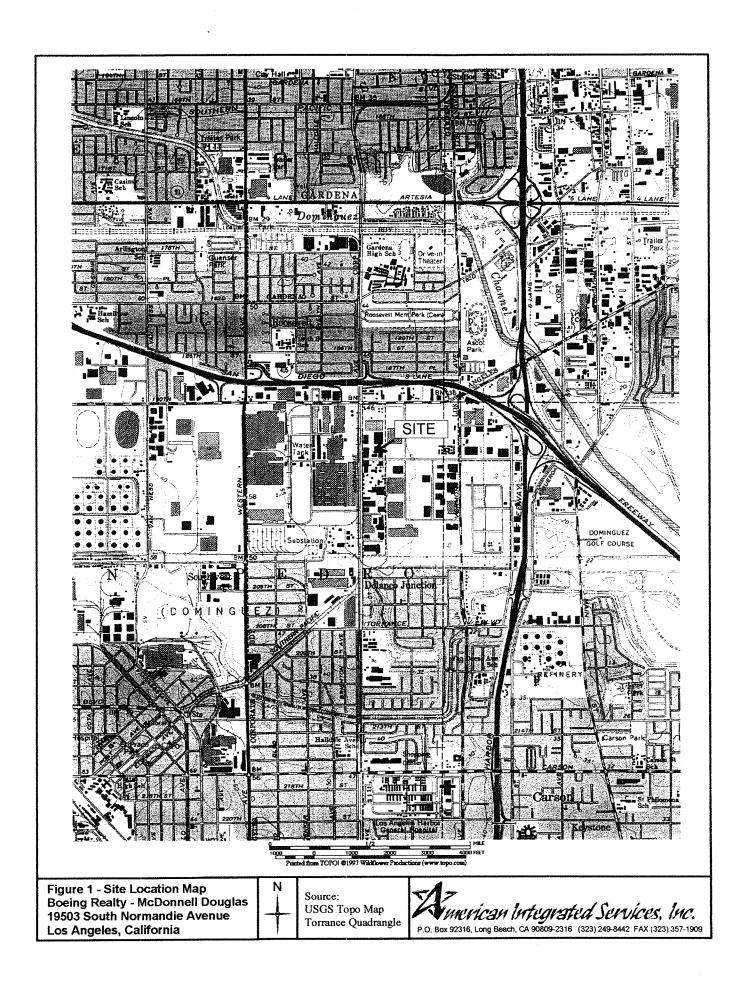
John Pings

Operations Manager



APPENDIX 1

FIGURES AND TABLES



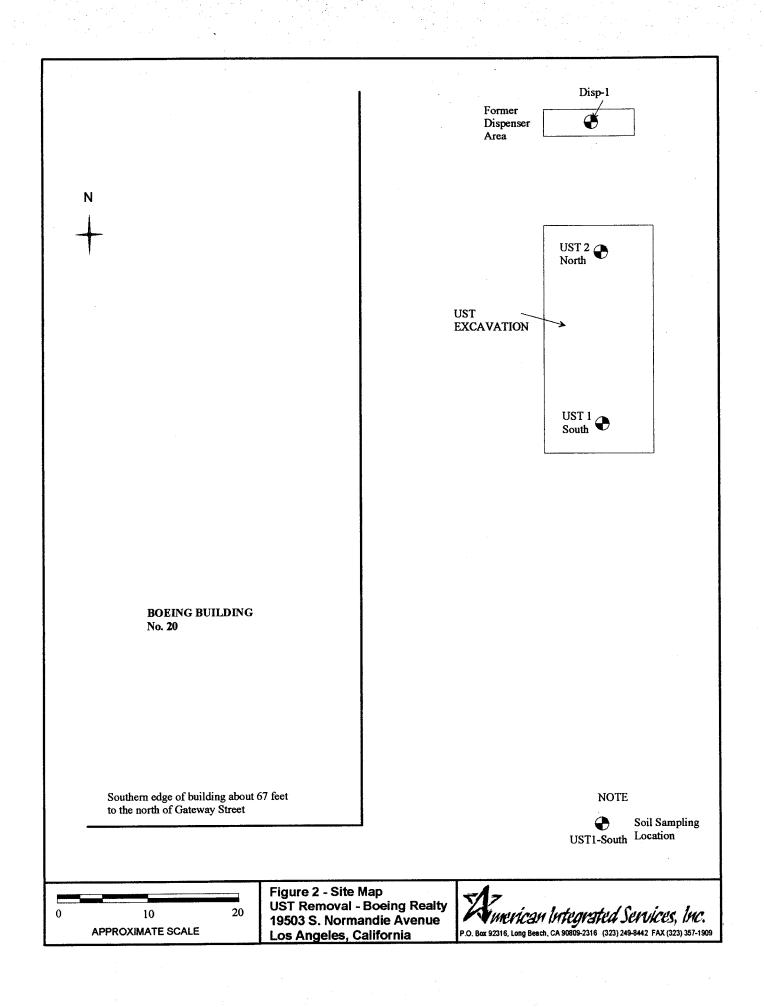


TABLE 1: SOIL ANALYTICAL RESULTS – UST CLOSURE
Boeing Realty – McDonnell Douglas – 19503 South Normandie Avenue, Los Angeles,
California

Sample No.	UST 1-South	UST 2- North	Disp-1
Sampling Date	8/29/00	8/29/00	8/29/00
Depth (feet below grade)	11	11	3
TPH-G (mg/Kg)	<1.0	<1.0	1.7
Benzene (mg/Kg)	< 0.0050	< 0.0050	< 0.0050
Toluene (mg/Kg)	0.0087	< 0.0050	< 0.0050
Ethyl-benzene (mg/Kg)	<0.005	<0.0050	<0.0050
Xylenes (mg/Kg)	0.015	< 0.015	< 0.015
MTBE (mg/Kg)	< 0.035	0.72	< 0.035
Confirmation MTBE (mg/Kg)	NA	0.390	NA
Lead (mg/Kg)	<5.0	7.3	6.8

NOTE:

Total Petroleum Hydrocarbons as Gasoline (TPH-G) analysis performed by EPA Method 8015 Modified, Gasoline Range

Benzene, Toluene, Ethylbenzene, Xylenes and MTBE analysis performed by EPA Method 8021

Confirmation MTBE analyzed by EPA Method 8260B

Total Lead analyzed by EPA Method 7420

NA: Not Analyzed

MTBE: methyl tertiary butyl ether

APPENDIX 2

PERMIT

LOS ANGELES CITY FIRE DEPARTMENT Division 5 Permit - Atmospheric Underground Tank

	Divisior	n 5 Permit - Atmo	spheric Under	ground Tank	
		Fire Dept Us	se Only		
ata Managment Unit: Tanks are registered and fees paid to date.	LAFD Unified Facility ID:	Program -001001-T-30279-3	Permit No. 9316	Fire Station #	8/21/00 (work must commence within 6
S. My signature	li .	ement Inspector Stivason	Permit Type: •	ent by Removal	Expiration Date: 8/21/01 (work must be completed
		LOCATION INFO	ORMATION		
oing Business As (DBA):			EPA ID No	O. (not required for Insta	llation or Monitoring)
Boeing Real	ty - McDonne	il Douglas	CA	C001487880	
Address: Number	Dir.	Street Name	St., Av	e., Blvd., etc. Phone	
19503	S	Normandie		Ave. 56	2/627-4900
City: Los Angeles		State: CA	Zip: 90501		
		PROPERTY	OWNER		
Name: Boeing Realty - McI	Donnell Dougl	as		Phone No.: 5	62/627-4900
Address: 3760 Kilroy Airp	ort Way, Suite	500			
City:	100	State:	Zip: 90806		
Long Beach		Signature	-1-1		
Print Name: John Marasco			180 L	. WARASCO	Staring Repr.
Oom Maraoo		CONTRACTOR	INFORMATION		s tectif here
		CONTRACTOR	MINICIALION	\	
Company Name: American Ir	ntegrated Sen	vices		Phone No.:	323-249-8442
Address:					
2680 SEMINOLE	AVENUE				
City: LYNWOOD		State: CA	Zip: 9026	2	
City Business Number:		State Contractors	Number:	Work Comp Nu	ımber:
0943223 - 20		757133 AHaz		1535905-	01
Print Name:		Signature		Title:	
Ed Wardle	4	A GIC	Ill i	Pro	ect Manager
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☐ Emergency Plan	Check / Si	te Assessment	RY	***	
Inspector Name: Jones		Inspector	Signature:	11	

LA CITY FIRE DEPT. UNDERGROUND TANK ABANDONMENT REPORT

FACILITY ADDRESS	19503	S. NORMANDIE
PERMIT #	93/6	DATE 8-29-00

FULL REPORT DUE IN 30 DAYS CONSISTING OF THE FOLLOWING:

- A. SOIL ANALYSIS, FROM ALL SAMPLES TAKEN ON THE ABOVE DATE.
- B. PLOT PLAN, CLEARLY ILLUSTRATING THE LOCATION SOIL SAMPLES WERE TAKEN FROM.
- C. CHAIN OF CUSTODY.

TANK 7

- D. UNIFORM MANIFEST FOR SOIL REMOVED FROM SITE.
- E. CERTIFICATE OF DISPOSAL FOR TANKS AND PIPING.
- F. MARINE CHEMIST TANK CERT, RINSE MANIFEST ANY PAPER WORK PERTAINING TO THIS ABANDONMENT SITE.
- G. ALL REPORTS IN DUPLICATE, NO COMPOSITES. RESULTS IN PARTS PER MILLION, ALL SAMPLES TO BE TESTED FOR BTXE AND MTBE.

8 8	GAS 015 M 020 BTXE-MTBE 420 TOTAL LEAD	DIESEL 8015 M 8020 BTXE-MTBE 7420 TOTAL LEAI		1
T T T	PRODUCT ANK 1 6A S TANK 2 TANK 3 TANK 4 TANK 5	# OF SAMPLES	DISPENSER PITS PIPE TRENCHES SOIL PILES BACKGROUND LEAD WATER SAMPLE	
1	TANK 6			イ

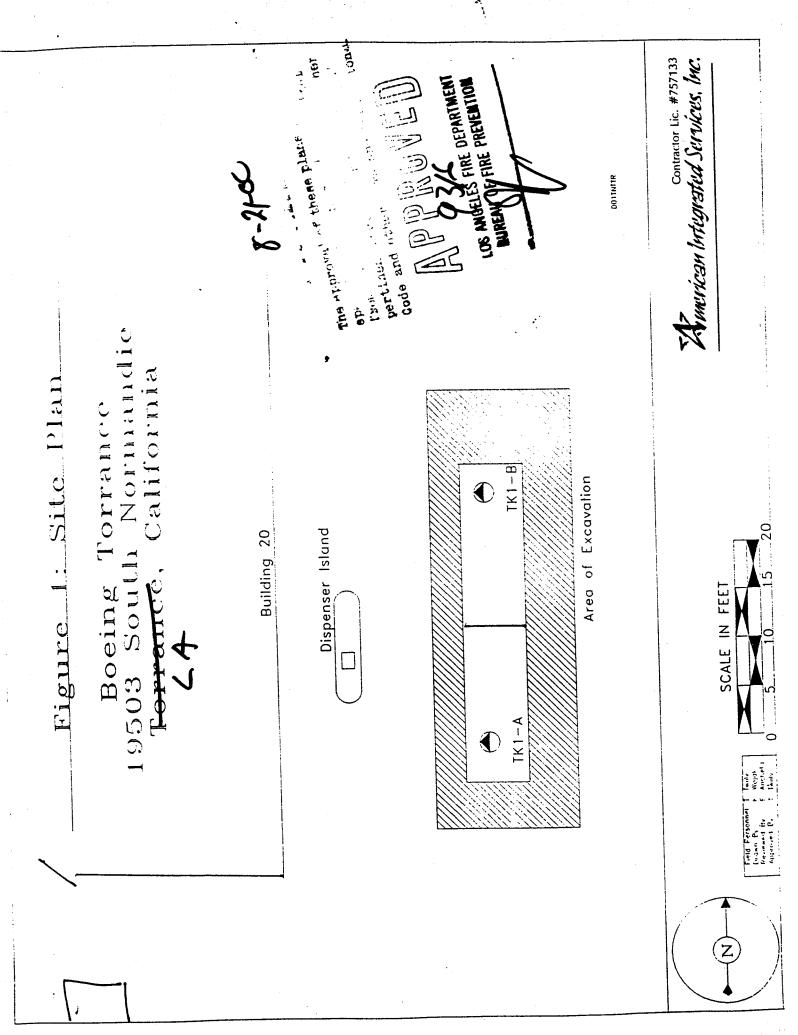
MAIL TO INSPECTOR LISTED BELOW WITHIN 30 DAYS. IF SAMPLES EXCEED NON-DETECTION LEVELS INCLUDE A STATE UNAUTHORIZED RELEASE FORM, OR YOUR REPORT WILL NOT BE PROCESSED.



DEAN J. STIVASON
FIRE INSPECTOR
LOS ANGELES FIRE DEPARTMENT
ENVIRONMENTAL UNIT

(310) 732-4580 (213) 847-0600 FAX: (310) 732-4579 http://www.cl.la.ca.us/deot/LAFD BUREAU OF FIRE PREVENTION 200 N. MAIN STREET ROOM 930. CHE LOS ANGELES. CALIFORNIA 90012

TOTAL SAMPLES



CITY OF LOS ANGELES

INVOICE

	es City Fire Department Unified Progr	am 	Date:	8/21/2000
Undergrou	und Storage Tank Fees for Service	Invoi	ce No.:	3316
pplicant/Contractor Information	1:	Pern	nit No.:	9316
Name of Applicant:	Ed Wardle	Permi	t Type:	Abandonment by Removal
Representing:	American Integrated Services			Removal
(Company Name/Self) Applicant Phone No.:	323-249-8442		pection District:	423
	FD Facility ID No.: 001361-1 30271-3	}	Check	
Business Name (DBA)	: Boeing Realty - McDonnell Douglas	i	pector:	Jones
Site Address	19503 S Normandie Ave.		rcement spector:	· ·
	Los Angeles CA 90501 City State Zi			
Abandonment by Remo	val Tanks: 1	.00 plus \$109.00 for each additional tank \$327.00		\$218.00
Add to/Alter: Monitoring	, Piping, Dispenser	\$327.00		
Tank Entry, Lining, Rep	air	\$327.00		
Site Assessment		\$109.00		
Emergency Plan Check	/ Site Assessment	\$436.00		
		Total	Due:	\$218.00
Plan Check and Inspection service time required for the service.	vices are calculated on a fee for service basis. been assigned a charge based on the estimated	For Cash Payments BILLING & ACCOU 10TH FLOOR, RM	NTS REG NO. 107	70
If Plan Check/Inspection service charges will accrue in six minut billed to the Responsible Party.	es exceed the assigned hours, additional e increments. These additional charges will be	Pd	පි	-21-00
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Date: 8/21/ 0 Time: 10:44:35 AM

APPENDIX 3 TANK REMOVAL DOCUMENTATION

MIGCO WHO DOHE

FROM STATE IRON . METAL 310 404 9584

AIS 20376

CERTIFICATE OF DESTRUCTION

State Iron and Metals 13780 E. Imperial Hwy., Santa Fe Springs, CA 90670 Phone#(562)404-8683

19503 S. Normandie
Los Angeles
1-5,000 gal. Steel Tank
Underground Storage Tank(s)
Scrapped, Crushed and Destroyed At
on and Metals, Santa Fe Springs, CA
On: 8-30-00
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	16. GENERATOR'S CERTIFICATION: I hereby declare that the contemporal processed, marked, and labeled, and are in all respects in proper of the seconomically practicable and that I have selected the practicable threat to human health and the environment; OR, If I am a see waste management method that is available to me and that I co. Printed/Typed Name	gruin in place to reduce the volume all quantity generator, I have me a offord. Signature	or disposal or disposal or disposal or good	city of war currently cr faish affort	ste generated to the validable to me white to minimize my we	e degree I have the minimizes the paste generation of Month	determined to resent and fund select the
	16. GENERATOR'S CERTIFICATION: I hereby declare that the contemporal packed, marked, and labeled, and are in all respects in proper of the contemporal process of the contemporal proce	gram in place to reduce the volume all quantity generator, I have me afford. Signature	or disposal or disposal or disposal or good	city of war currently cr faish affort	ste generated to the validable to me white to minimize my we	Month	determined to resent and fund select the Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the compacted, marked, and tabeled, and are in all respects in proper of economically practicable and that I have selected the practicable threat to human health and the environment; OR, If I am a series management method that is available to me and that I can be provided by the control of the con	gram in place to reduce the volume all quantity generator, I have me afford. Signature	or disposal or disposal or disposal or good	city of war currently cr faish affort	ste generated to the validable to me white to minimize my we	e degree I have the minimizes the paste generation of Month	Day Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the control packed, marked, and tabeled, and are in all respects in proper of connection processes and that I have selected the practical threat to human health and the environment; OR, if I am a sense management method that is available to me and that I can be represented by the control of the co	gram in place to reduce the volume all quantity generator, I have me afford. Signature Signature	or disposal or disposal or disposal or good	city of war currently cr faish affort	ste generated to the validable to me white to minimize my we	Month	determined to resent and fund select the Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the control packed, marked, and tabeled, and are in all respects in proper of connection processes and that I have selected the practical threat to human health and the environment; OR, if I am a sense management method that is available to me and that I can be represented by the control of the co	gram in place to reduce the volume all quantity generator, I have me afford. Signature Signature	or disposal or disposal or disposal or good	city of war currently cr faish affort	ste generated to the validable to me white to minimize my we	Month	determined to resent and fund select the Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the compacted, marked, and tabeled, and are in all respects in proper of economically practicable and that I have selected the practicable threat to human health and the environment; OR, If I am a serie waste management method that is available to me and that I contributed Name 17. Transporter 1 Acknowledgement of Receipt of Materials 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name	gram in place to reduce the volume all quantity generator, I have me afford. Signature Signature	or disposal or disposal or disposal or good	city of war currently cr faith affort	ste generated to the validable to me white to minimize my w	Month	determined to resent and fund select the Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the contemporal packed, marked, and labeled, and are in all respects in proper of the contemporal process of the contemporal proce	gram in place to reduce the volume all quantity generator, I have me afford. Signature Signature	or disposal or disposal or disposal or good	city of war currently cr faith affort	ste generated to the validable to me white to minimize my w	Month	determined to resent and fund select the Day
200	16. GENERATOR'S CERTIFICATION: I hereby declare that the control packed, marked, and tabeled, and are in all respects in proper of the control packed, marked, and tabeled, and are in all respects in proper of connection of the process of the proc	grum in place to reduce the volument of this consignment are fully condition for transport by highway grum in place to reduce the volument, storage, all quantity generator, I have men afford. Signature Signature	ame and took or disposal and a good	city of wa currently or faith effort	ite generated to the callable to me white to minimize my wr	Month Month	Day
2000	16. GENERATOR'S CERTIFICATION: I hereby declare that the control packed, marked, and tabeled, and are in all respects in proper of soonomically practicable and that I have selected the practicable threat to human health and the environment; OR, if I am a servented threat to human health and the environment; OR, if I am a servented in the property of the process of	grum in place to reduce the volument of this consignment are fully condition for transport by highway grum in place to reduce the volument, storage, all quantity generator, I have men afford. Signature Signature	ame and took or disposal and a good	city of wa currently or faith effort	ite generated to the callable to me white to minimize my wr	Month	determined to resent and fund select the Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the control packed, marked, and tabeled, and are in all respects in proper of the control packed, marked, and tabeled, and are in all respects in proper of connection of the process of the proc	gram in place to reduce the volide method of treatment, storage, all quantity generator, I have not a afford. Signature Signature	ame and took or disposal and a good	city of wa currently or faith effort	ite generated to the callable to me white to minimize my wr	Month Month	Day
	16. GENERATOR'S CERTIFICATION: I hereby declare that the compacted, marked, and tabeled, and are in all respects in proper of consecution of the environment; of the process threat to human health and the environment; OR, if I am a service management method that is available to me and that I can brinted/Typed Name 17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name 19. Discrepancy Indication Space	sents of this consignment are fully condition for transport by highway gram in place to reduce the woll le method of treatment, storage, all quentity generator, I have me in afford. Signature S	or disposal and a good of good or good	city of war urroutly or faith afford	ite generated to the callable to me white to minimize my wr	Month Month	Day
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Aug. 24 1999 07:24AM P1

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FROM:



Services

■ X Menrove TEP (626) 930-1200

FAX (626) 930-1212

Regional TEL (909) 796-0544 FAX (909) 796-7675

Overtime

□Costa Mesa •TEL (714) 444-9660 FAX (714) 444-9640

Straight

DAILY TIME SHEET AND FIELD REPORT NOTIFICATION OF HOURS / SERVICES DURING CONSTRUCTION

Services

Overtime

Straight

Travel Mileage: N/A (Solls Only)		Testing	(Althoration)
Grading Observation & Testing	Observ	ration of Ecundation Excavation	2
Concrete	Mason		
Welding		n and Bolting	
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While - Project Manager / Yellow - Billing / Pink - Field File / Goldenicd - Client Rep

APPENDIX 4

LABORATORY AND QUALITY ASSURANCE/CONTROL (QA/QC) REPORTS AND CHAIN-OF-CUSTODY RECORDS





ton Ave., Irvine, CA 92606 1014 E. Cooley: Suite A, Colton, CA 92324 16525 Sherman Way, Suite C-11, Van Nuys, CA 92406 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (949) 261-1022 FAX (949) 261-1228 (909) 370-4667 FAX (909) 370-1046 (818) 779-1844 FAX (818) 779-1843 (858) 505-9596 FAX (858) 505-9689 (480) 785-0043 FAX (480) 785-0851

LABORATORY REPORT

Prepared For:

American Integrated Services

2680 Seminole Ave.

Lynwood, CA 90809-2316

Attention: John Pings

Project: Boeing Torrance

20030

Sampled: 08/29/00

Received: 08/30/00

Reported: 09/15/00

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197 AZ DHS License #AZ0428

Del Mar Analytical, Irvine Jim Hatfield

Project Manager



q Iton Ave., Irvine, CA 92606 1014 E. Coole; ..., Suite A, Colton, CA 92324 16525 Sherman Way, Suite C-11, Van Nuys, CA 92406 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 9830 South 51st St., Suite B-120, Phoenix, AZ 85044

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American Integrated Services

2680 Seminole Ave.

Lynwood, CA 90809-2316 Attention: John Pings Client Project ID: Boeing Torrance

20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

VOLATILE FUEL HYDROCARBONS/BTEX/MTBE (EPA 5030B/8015B/8021B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/kg	mg/kg				
Sample ID: IJH1048-01 (20030 UST	T1-SOUTH - Soil)							
Volatile Fuel Hydrocarbons	EPA 8015B/8021	1010901	1.0	ND	1	9/9/00	9/9/00	QG
Benzene	EPA 8015B/8021	1010901	0.0050	ND	1	9/9/00	9/9/00	
Toluene	EPA 8015B/8021	1010901	0.0050	0.0087	1	9/9/00	9/9/00	
Ethylbenzene	EPA 8015B/8021	1010901	0.0050	ND	1	9/9/00	9/9/00	
Total Xylenes	EPA 8015B/8021	1010901		0.015	1	9/9/00	9/9/00	
Methyl-tert-butyl Ether (MTBE)	EPA 8015B/8021	1010901	0.035	ND	1	9/9/00	9/9/00	
Surrogate: 4-BFB (PID) (70-125%)				88.2 %				
Surrogate: aaa-TFT (FID) (60-135%)			83.2 %				
Sample ID: IJH1048-02 (20030 US'	Γ2-NORTH - Soil)							
Volatile Fuel Hydrocarbons	EPA 8015B/8021		1.0	ND	1	9/9/00	9/9/00	QG
Benzene	EPA 8015B/8021	1010901	0.0050	ND	1	9/9/00	9/9/00	
Toluene	EPA 8015B/8021	1010901		ND	1	9/9/00	9/9/00	
Ethylbenzene	EPA 8015B/8021	1010901		ND	1	9/9/00	9/9/00	
Total Xylenes	EPA 8015B/8021			ND	1	9/9/00	9/9/00	
Methyl-tert-butyl Ether (MTBE)	EPA 8015B/8021	1010901	0.035	0.72	1	9/9/00	9/9/00	
Surrogate: 4-BFB (PID) (70-125%)				105 %				
Surrogate: aaa-TFT (FID) (60-135%	7)			101 %				
Sample ID: IJH1048-03 (20030 DIS	SP-1 - Soil)							
Volatile Fuel Hydrocarbons	EPA 8015B/8021	101090		1.7	1	9/9/00	9/9/00	QG
Benzene	EPA 8015B/8021	101090	0.0050	ND	1	9/9/00	9/9/00	
Toluene	EPA 8015B/8021	101090		ND	1	9/9/00	9/9/00	
Ethylbenzene	EPA 8015B/802	101090		ND	1	9/9/00	9/9/00	
Total Xylenes	EPA 8015B/802	1 101090	0.015	ND	1	9/9/00	9/9/00	
Methyl-tert-butyl Ether (MTBE)	EPA 8015B/802	1 101090	0.035	ND	1	9/9/00	9/9/00	
Surrogate: 4-BFB (PID) (70-125%)				104 %				
Surrogate: aaa-TFT (FID) (60-135%	%)			86.2 %				

Del Mar Analytical, Irvine

Jim Hatfield Project Manager



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2680 Seminole Ave.

Lynwood, CA 90809-2316 Attention: John Pings Client Project ID: Boeing Torrance

20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

MTBE (EPA 8260 MOD.)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJH1048-02 (20030 UST2-N	ORTH - Soil))						
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	1011208	50	390	10	9/12/00	9/12/00	
Surrogate: Dibromofluoromethane (85-12	25%)			88.2 %				



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20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

Analyte	Method		ETALS Reporting Limit mg/kg	Sample Result mg/kg	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IJH1048-01 (20030 UST1-5	SOUTH - Soil)						
Lead	EPA 7420	C0I0504	5.0	ND	1	9/5/00	9/6/00	
Sample ID: IJH1048-02 (20030 UST2-1	NORTH - Soil)						
Lead	EPA 7420	C0I0504	5.0	7.3	1	9/5/00	9/6/00	
Sample ID: IJH1048-03 (20030 DISP-1	- Soil)							
Lead	EPA 7420	C0I0504	5.0	6.8	1	9/5/00	9/6/00	



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Lynwood, CA 90809-2316 Attention: John Pings Client Project ID: Boeing Torrance

20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS/BTEX/MTBE (EPA 5030B/8015B/8021B)

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: I0I0901 Extracted: 09/09	<u>/00</u>									
Blank Analyzed: 09/09/00 (I0I09	01-BLK1)									
Volatile Fuel Hydrocarbons	ND	1.0	mg/kg							QG
Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	mg/kg							
Ethylbenzene	ND	0.0050	mg/kg							
Total Xylenes	ND	0.015	mg/kg							
Methyl-tert-butyl Ether (MTBE)	ND	0.035	mg/kg							
Surrogate: 4-BFB (PID)	0.0527		mg/kg	0.0500		105	70-125			
Surrogate: aaa-TFT (FID)	0.0506		mg/kg	0.0500		101	60-135			
LCS Analyzed: 09/09/00 (101090	1-BS1)									
Volatile Fuel Hydrocarbons	1.22	1.0	mg/kg	1.10		111	70-125			QG
Benzene	0.0919	0.0050	mg/kg	0.100		91.9	80-120			
Toluene	0.0929	0.0050	mg/kg	0.100		92.9	80-120			
Ethylbenzene	0.0925	0.0050	mg/kg	0.100		92.5	85-120			
Total Xylenes	0.273	0.015	mg/kg	0.300		91.0	85-120			
Methyl-tert-butyl Ether (MTBE)	1.26	0.035	mg/kg	1.50		84.0	75-130			
Surrogate: 4-BFB (PID)	0.0545		mg/kg	0.0500		109	70-125			
Surrogate: aaa-TFT (FID)	0.0528		mg/kg	0.0500		106	60-135			
Matrix Spike Analyzed: 09/09/00	(1010901-M	IS1)			Source:	IJI0254-	-01			
Volatile Fuel Hydrocarbons	1.08	1.0	mg/kg	1.10	ND	98.2	65-130			QG
Benzene	0.101	0.0050	mg/kg	0.100	ND	100	75-120			
Toluene	0.101	0.0050	mg/kg	0.100	ND	97.0	75-120			
Ethylbenzene	0.0987	0.0050	mg/kg	0.100	ND	97.7	80-125			
Total Xylenes	0.290	0.015	mg/kg	0.300	ND	94.9	80-120			
Methyl-tert-butyl Ether (MTBE)	1.46	0.035	mg/kg	1.50	ND	97.3	50-150			
Surrogate: 4-BFB (PID)	0.0530		mg/kg	0.0500		106	70-125			
Surrogate: aaa-TFT (FID)	0.0487		mg/kg	0.0500		97.4	60-135			

Del Mar Analytical, Irvine

Jim Hatfield Project Manager



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16525 Sherman Way, Suite C-11, Van Nuys, CA 92406
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American Integrated Services

2680 Seminole Ave.

Lynwood, CA 90809-2316 Attention: John Pings Client Project ID: Boeing Torrance

20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS/BTEX/MTBE (EPA 5030B/8015B/8021B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0I0901 Extracted: 09/09/	<u>′00 </u>									
Matrix Spike Dup Analyzed: 09/0	9/00 (10109)1-MSD1)			Source:	IJI0254-	01			
Volatile Fuel Hydrocarbons	1.06	1.0	mg/kg	1.10	ND	96.4	65-130	1.87	20	QG
Benzene	0.102	0.0050	mg/kg	0.100	ND	101	75-120	0.985	20	
Toluene	0.101	0.0050	mg/kg	0.100	ND	97.0	75-120	0	20	
Ethylbenzene	0.0967	0.0050	mg/kg	0.100	ND	95.7	80-125	2.05	20	
Total Xylenes	0.283	0.015	mg/kg	0.300	ND	92.6	80-120	2.44	20	
Methyl-tert-butyl Ether (MTBE)	1.46	0.035	mg/kg	1.50	ND	97.3	50-150	0	30	
Surrogate: 4-BFB (PID)	0.0514		mg/kg	0.0500		103	70-125			
Surrogate: aaa-TFT (FID)	0.0494		mg/kg	0.0500		98.8	60-135			

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2680 Seminole Ave.

Lynwood, CA 90809-2316 Attention: John Pings Client Project ID: Boeing Torrance

20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

METHOD BLANK/QC DATA

MTBE (EPA 8260 MOD.)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1011208 Extracted: 09/12/00	<u>0</u>									
Blank Analyzed: 09/12/00 (I0I1208	B-BLK1)									
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/kg							
Surrogate: Dibromofluoromethane	45.6		ug/kg	50.0		91.2	85-125			
LCS Analyzed: 09/12/00 (I0I1208-	BS1)									
Methyl-tert-butyl Ether (MTBE)	46.1	5.0	ug/kg	50.0		92.2	65-135			
Surrogate: Dibromofluoromethane	45.7		ug/kg	50.0		91.4	85-125			
Matrix Spike Analyzed: 09/12/00 (I0I1208-M	S1)			Source:	IJH1082	-16			
Methyl-tert-butyl Ether (MTBE)	47.7	5.0	ug/kg	50.0	ND	92.4	65-155			
Surrogate: Dibromofluoromethane	45.3		ug/kg	50.0		90.6	85-125			
Matrix Spike Dup Analyzed: 09/12	/00 (I0I120	08-MSD1)			Source:	IJH1082	-16			
Methyl-tert-butyl Ether (MTBE)	48.9	5.0	ug/kg	50.0	ND	94.8	65-155	2.48	25	
Surrogate: Dibromofluoromethane	43.7		ug/kg	50.0		87.4	85-125			



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Sampled: 08/29/00

Received: 08/30/00

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: C0I0504 Extracted: 09/05/0	<u>)0</u>								* .	
Blank Analyzed: 09/06/00 (C0I050 Lead	4-BLK1) ND	5.0	mg/kg							
LCS Analyzed: 09/06/00 (C0I0504 Lead	-BS1) 18.0	5.0	mg/kg	20.0		90.0	85-120			
Matrix Spike Analyzed: 09/06/00 (Lead	C010504-M 3 23.0	S1) 5.0	mg/kg	20.0	Source: ND	IJH1048 97.5	-01 70-115			
Matrix Spike Dup Analyzed: 09/06 Lead	mg/kg	20.0	Source: ND	IJH1048 97.0	70-115	0.436	20			

IJH1048 < Page 8 of 9>



27 ton Ave., Irvine, CA 92606 1014 E. Cooley Suite A, Colton, CA 92324 16525 Sherman Way, Suite C-11, Van Nuys, CA 92406 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (949) 261-1022 FAX (949) 261-1228 (909) 370-4667 FAX (909) 370-1046 (818) 779-1844 FAX (818) 779-1843 (858) 505-9596 FAX (858) 505-9689 (480) 785-0043 FAX (480) 785-0851

American Integrated Services

2680 Seminole Ave.

Lynwood, CA 90809-2316 Attention: John Pings Client Project ID: Boeing Torrance

20030

Report Number: IJH1048

Sampled: 08/29/00

Received: 08/30/00

DATA QUALIFIERS AND DEFINITIONS

QG Carbon range C6-C12 quantitated against a gasoline standard.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

NR Not reported.

RPD Relative Percent Difference

Del Mar Analytical, Irvine Jim Hatfield Project Manager Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228 1014 E. Cooley Dr., Suite A Colton, CA 92324 (909) 370-4867 FAX (909) 370-1046 FAX (909) 570-1046 FAX (909) 570-1046 FAX (909) 570-9659 FAX (909) 570-9659

CHAIN OF CUSTODY FORM

Page / of /

9484 Chesapeake Dr., Suite 805, San Diego, CA 92123	3 (619) 505-95	596 FAX (619) 5	05-9689													
Client Name/Address: Tuberv	ated	Savia	Project/F	Number:			·		Analy	sis Requ	ired	·	γ	Т		
Project Manager: Sampler: Sample Description	Long CA-90	Beach 1809	B	eeim 1	former	GRO	138) total								12
Project Manager:	35		Phone N	umber: 3. Z49,8°	442	rod	18	4							IJH 10°	
Sampler:			Fax Nun	nber: 3. 357,19	209	0650	2218	450								
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	$ \infty $	Ø	1							Special Instruction	
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70030 49TZ-North	roil	Jav	1	8/29/002 8/24/08	5 chily	K		2							For 82 Confirma	1501
70030 Disp-1	Soil	Jon	1	8240t	alid	X	X	/							2 400 BB	1
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Relinquished By:	<i>8</i> /3	გე /ბა Date /Tim	/ e:	715	Received in L	ab by:		Date /T	ime:			Sample	rs e Integrity			.(
Reinquisned by.		2010 / 1111					14	8-	30 ~ a	any addit	ional anal	intact	ormed on	this proi	on ice5 ect. Payment for services	s is

Note: By relinquishing samples to Del Mar Analytical, client agrees to pay for the services requested on this chair due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.